Ah. 1.478

CANADIANA
C2
JAN - 6 1987

ENVIRONMENT VIEWS

SECOND CLASS MAIL REGISTRATION NUMBER 4405 EDMONTON VOLUME NINE NUMBER FOUR 1986

Careers in Environment

ENVIRONMENT VIEWS

3 Editor's Notebook

4 Making the Connections
Work in an environmental career crosses traditional boundaries.

8 Viewpoint

9 Preparing
Unconventional studies may be needed for a broader perspective.

13 The Jobs: Technical and Research
In parkas or lab coats, they're on the front lines.

16 The Jobs: Planning and Management
Shaping the policies of environmental protection.

19 The Jobs: Education and Communications
Keeping you and me informed and concerned.

22 The Jobs: New Professional Specialties
In law, medicine and design, new ways of looking at the issues.

25 The Jobs: Environmental Enforcement
Dedicated men and women protecting natural resources and public safety.

28 The Environment Portfolio
The politicians who have tackled the environment.

32 Environment Update

SUSAN BRUN

Environment Views is published quarterly by Alberta Environment. Each issue deals with a specific topic from various viewpoints with the aim of increasing awareness of environmental issues among Albertans. *Environment Views* is directed by an independent board with representation from environmental groups, government and industry. The views expressed by the publication are not necessarily those of Alberta Environment.

Subscriptions are free and can be obtained by mailing the enclosed card. When notifying *Environment Views* of a change of address, please quote the subscription number on your mailing label.

Permission to reproduce any part of this publication for commercial purposes should be obtained by writing the address below. Reproduction for other purposes should credit this publication.

Letters to the editor are welcomed, and should be sent to the editor,

Environment Views
Alberta Environment
Communications Branch
12th Floor, Oxbridge Place
9820 - 106 Street
Edmonton, Alberta T5K 2J6

Editor:
Maryhelen Vicars
Researcher:
Lynn Zwicky
Editorial Board:
Norman Elliott, public affairs director, Canadian Petroleum Association, Calgary; Natalia Krawetz, partner in Krawetz and MacDonald Research Management Consultants, Edmonton; David McCoy, environmental scientist, Canterra Energy Ltd., Calgary; Don Nicol, director of the communications branch, Alberta Environment; Ray Rasmussen, Alberta Wilderness Association; Kim Sanderson, Canadian Society of Environmental Biologists; David Spink, head of the municipal engineering branch, standards and approvals division, Alberta Environment; and Bob Westbury, assistant vice-president, Transalta Utilities Corp., Edmonton.

The editorial board was helped in planning this issue by Dr. Ian Campbell, Department of Geology, University of Alberta; Dr. Farooq Siddiqui, head of the Biosciences program at the Northern Alberta Institute of Technology; and Dr. William Perks, professor of urban and regional planning at the Faculty of Environmental Design, University of Calgary.

Cover: Fred Katz

Alberta
ENVIRONMENT

EDITOR'S NOTEBOOK

I guess I have an environmental career of sorts. After all, my main responsibility is this magazine and I often do contract work on conservation-related projects. And I was an unemployed biology graduate (with a dog's breakfast of a transcript littered with history, English and fine arts courses) before I took up the journalism trade — to pay the rent and because I really liked putting things into words.

Well, *maybe* you could call this an environmental career. But what about an engineer who builds bridges? The environment is affected by the work he or she does, but that is not quite what we mean. What about another engineer, who (hypothetically) works as a consultant to bridge companies, telling them how to build each particular bridge to minimize negative impact on the environment?

That's more like it, but when we started to talk about doing an issue of *Environment Views* on environmental careers we had more conventional jobs in mind: the so-called "bugs and bunnies" people who count animals and plants to measure environmental damage; the pollution control people who measure the stuff and help to minimize it; and the environmental education people who teach us how the environment works.

We talked to all these people for this issue, but also interviewed a few who were less obvious choices, just to illustrate the breadth of the topic, and the number of different career paths open to someone who wants his or her life's work to reflect a concern for, or have an impact on, the environment.

The largest part of this issue is devoted to a series of brief sketches of some interesting jobs (including the environment minister's). But we begin with a discussion by Calgary writer Gillian Sniatynski on *interdisciplinarity*, the word and concept which cropped up most often when we were planning this issue. Almost without exception, careers which fall into the loosely-defined category of "environmental" involve some kind of cutting across traditional disciplines. At the academic level, that may mean courses taken from several different faculties (maybe my ragbag transcript was not so bad after all). On the job, an individual will need to have the skills of several different professions or trades, or at least know enough about the other jobs to talk their specialized language.

We hope that readers, young and old, who might be considering an environment-related career will find this issue helpful, but I am sure that all of you will find it a fascinating look behind the scenes.

Maryhelen Vicars, a former journalist, is the freelance editor of Environment Views.

Gillian Sniatynski

Making the Connections

Interdisciplinarity is the key to almost every environmental career

American biologist Garrett Hardin, looking for a way to uncover the essentials of ecology, finally came up with: "We can never do merely one thing."

What he was trying to say concisely is that issues of ecology — and indeed of the environment as a whole — are extremely complex, and anyone planning to "manage" or "control" or otherwise intervene in any aspect of the environment had better know it.

It wasn't so long ago that people (urban dwellers especially) tended to talk about the environment as something out there, in the woods and water, quite separate from the areas where they lived and worked. It was as if our own lives bore no relationship to "the environment" — and our actions had no impact.

Now, even if we distinguish between "built" and "natural" environments, we know we're talking about one organic whole, whose parts are intricately and inextricably linked. Environmentalist Barry Commoner calls it the First Law of Ecology: "Everything is connected to everything else."

The links are not just physical. Oil exploration activity in a particular area may destroy animal habitat, which means fewer animals, which means less food and empty traplines for the local native community. The disrupted native economy may have all sorts of social implications, like migration to the city, or welfare dependence, or increased alcoholism.

We can't manipulate or manage one aspect of the environment without some spill-over somewhere else. But if people think they *can* do "merely one thing," they don't look beyond the boundaries of their own area of expertise or interest — and they may miss something important.

Mike Kelly, now a senior environmental research officer with the Environment Council of Alberta, tells of a project he worked on for the Institute for Northern Studies at the University of Saskatchewan. The project was an exploration of the feasibility of building a second dam on the Churchill River.

An architectural design student at the University of Calgary's Faculty of Environmental Design.

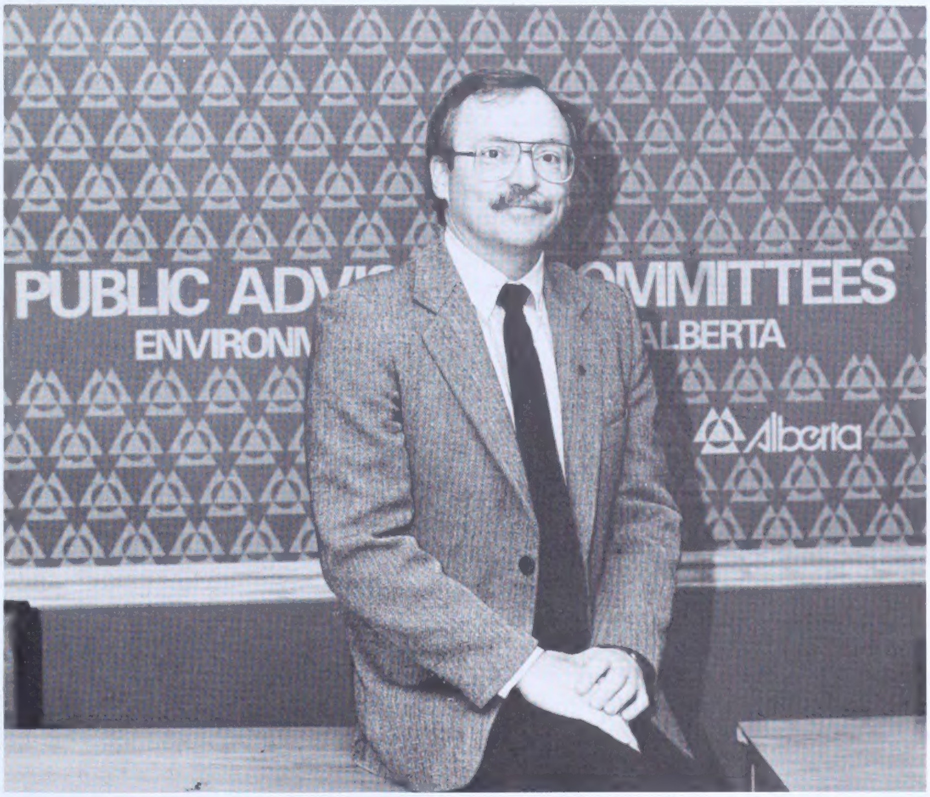
> The First Law of Ecology: "Everything is connected to everything else."

In the early 1970s, Kelly recalls, almost every discipline at the University of Saskatchewan, from biologist to social scientists to engineers, had contributed findings and conclusions, and the quality of their research was very high.

It wasn't until 1976-77 that Institute staff became involved — not to do any more primary research, but to pull all the separate studies together and look at the

SUSAN BRUN

Allan Legge of the Kananaskis Centre for Environmental Research.



FRED KATZ

Mike Kelly, an environmental research officer at the Environment Council of Alberta, where interdisciplinarity is essential.

results collectively.

It was an eye-opening exercise. They discovered, for example, that the people who did the fisheries study had identified a particular parasitic cyst that was likely to do considerable damage to the local whitefish population in the river.

This would have had a tremendous impact on the local native people, who depended on the fish. But the people who did the socio-economic study didn't know about the cyst and were therefore unable to consider its impact on the lives of the local people. The fisheries biologists and the social scientists had not talked to one another, and nobody got a true picture of the situation.

"If I needed assurance about the necessity of linking studies, that was it," says Kelly.

Clearly, environmental issues cross disciplinary boundaries. So working in an environmental career usually means working in an interdisciplinary way. Usually, it means being something more than just a biologist or just a sociologist. That "something more" can take a variety of forms.

Sometimes, it means simply knowing more — adding chunks of someone else's discipline on to one's own, out of interest, or need, or both.

Allan Legge, a senior professional associate with the Kananaskis Centre for Environmental Research, is this sort of interdisciplinary person.

He started out as an undergraduate in engineering physics, but also took drama courses. He then moved into biology, and enjoyed the biology and drama so much that he completed degrees in both.

Then he studied at Oregon State University's genetics institute, taking courses (in genetics) from people from disciplines as diverse as animal science and microbiology.

"We took courses as if we were specialists in these departments," he says.

"So automatically that puts you under a reasonable degree of immersion."

In his pursuit of genetics, he got interested in the interaction between genotypes and their environment, and that led him to plant physiology, chemistry, and even micrometeorology.

"I think maybe the degree of interdisciplinarity that I have acquired over the years is a bit extreme," he concedes.

The problem, for most people, is that in terms of environmental issues no one person can ever know all there is to know.

"One of the reasons that most people don't go into the interdisciplinary aspects of environmental research is that the field is so vast there is no earthly way you can be up to snuff on all of it," says Legge.

"People are not comfortable because there is always more to learn."

But everyone agrees that getting just a smattering of many disciplines is not the right response either. As Legge says, "You don't want someone so rounded they can roll."

Much better is a solid base (in almost any discipline), to which some interdisciplinary breadth is added. That's the thinking of the University of Calgary's Faculty of Environmental Design, for example.

Its program takes graduates from disciplines as diverse as fine arts and engineering, geography and education. They eventually specialize in one of four areas: architecture, planning, environmental science, and industrial design. But they all take a core program that links the specialties through topics like ethics, law, professional practice, group dynamics, institutions, social justice.

As seniors, they also take a course which sets them up in interdisciplinary teams to work on projects (or solve problems) supplied by real-life clients.

This course is "particularly horrendous", says William Perks, professor of urban and regional planning, and dean of the faculty for ten years from its founding in 1971.

But it is also a very fair simulation of the real work faculty graduates will be working in, often as environmental managers.

You can't *teach* interdisciplinarity, says Perks. But some people can learn it.

What they learn, what makes them "something more" than biologists or engineers, is above all an ability to communicate with people in other fields, to "speak their language."

As Legge describes it, they can "ask a question in the language of another discipline, and can understand the answer."

For students in the faculty of environmental design, it means, in Perks' terms, being able to move comfortably back and forth across disciplinary boundaries, and "developing judgment about the value and limitations of the contributions of other disciplines." It means knowing enough not to be snowed.

Perks says faculty graduates now work in a wide range of jobs in the private and public sector. Some are designing parks. Some are doing environmental impact assessments for oil companies. Some are working on economic development for small northern communities.

But being trained for certain types of professional environmental careers may be a mixed blessing.

Natalia Krawetz, an Edmonton environmental consultant, was one of the first graduates of a doctoral program in environmental psychology from the City University of New York. She has spent a lot of time since graduation fielding questions about exactly what environmental psychology is, and who would possibly want to hire her to practise it.

While some of Krawetz's fellow students have gone on to work in fairly specific aspects of the field, like home and office design, or playground planning, she is painting on the much bigger canvas of policy and planning for large-scale technology and resource development. She is primarily a social scientist, and she has done much, if not most, of her work with engineers.

Because she deals much more with the abstractions of policy and planning than with the technical details, she tends to work more closely with senior managers than with front-line staff.

"I have probably had greater influence at more senior levels than in more traditional occupations," she says.

"You can't teach *interdisciplinarity, but some people can learn it."*

SUSAN BRUN

Dr. William Perks

And balanced against the fact that few people know exactly what she does is the fact that she can't readily be categorized or stereotyped — or discounted.

Krawetz's own environmental career has taught her how to "look at things from multiple perspectives and not expect them all to add up."

"It's also taught me not to be afraid to borrow things — I'm a shocking borrower."

In many environmental careers, it's this flexibility and openness that is the primary asset.

Research officers at the Environment Council of Alberta have academic backgrounds ranging from wildlife biology to economics. But they work on issues often quite unrelated to their original specialties. In fact, says Mike Kelly, there's "a conscious effort" to move them around, so that everyone's horizons are broadened.

The work doesn't involve original research. But in preparation for public hearings on environmental issues, research officers sift through a vast amount of often highly technical and specialized material, reviewing and evaluating studies, extracting and synthesizing — all in order to produce readable background reports for the general public.

Sometimes, says Kelly, it's actually an asset to be working in a new area. It may take longer to produce the report, but someone with a fresh-from-outside perspective may do a better job of interpreting the issue to a lay reader.

Allan Legge has, for the past 12 years or so, supervised a major interdisciplinary study on sulphur deposition in the West Whitecourt area. He has worked with a large team — including climatologists, soil chemists, engineers, plant geneticists, and micrometeorologists.

There was an enormous amount of learning on the job.

"Interdisciplinary studies must be allowed to evolve. It's very difficult to specially create them."

In assembling a team to work on such a project, Legge says he wants people trained in a specific discipline, but who ideally are willing to "broaden their horizons," to learn the rudiments of another field.

He tries to get at least two people from each discipline to work in teams, so that everyone has *someone* with whom they can talk easily.

The interpersonal element is crucial too.

"Never lose sight of the fact that you're dealing with people," he cautions. "Because you're relying a lot on people's good graces to bend themselves in a way that may or may not be familiar."

And he learns enough about everyone's work to "keep them honest."

Interdisciplinarity is becoming more evident in more technically-oriented environmental careers as well.

At the Northern Alberta Institute of Technology, for example, students in the pollution monitoring program take a common first year of basic science courses, as well as learning about effective communication and technical writing. Only in the second year do they specialize — in pollution and environmental science, or fish and wildlife, or laboratory and research techniques.

Graduates of the program will be environmental technicians of various sorts. Their courses have been tailored to the requirements of the job market, and they do some interesting things to ensure their future usefulness as employees.

Because the effects of pollution may be

FRED KATZ

David Spink, head of Alberta Environment's municipal engineering branch, believes engineers must learn the team approach.

monitored by means of satellites, they have to know about remote sensing and aerial photograph interpretation. Because some may end up doing fieldwork in remote locations and in bad weather, there's a heavy physical education component, including survival techniques and skiing.

Civil engineers need to know more than just the basics of waste water treatment.

Another perspective on the increasing interdisciplinarity of technical careers comes from David Spink, an engineer and head of Alberta Environment's municipal engineering branch.

Spink says there has been recognition as far back as the early 1970s that civil engineers (who work mainly on water supply and sewage treatment) need to know more than just the basics of waste water treatment. For some time there have been courses available in areas like microbiology, toxicology and biochemistry as well, and engineers in the course of their work have learned to work with these other specialists.

But increasingly they are having to talk to members of the public as well. People now are much more concerned about environmental issues, and want to be involved in decision-making. They now want some input as to the quality of their drinking water and the treatment of their sewage effluent.

"We as engineers are used to dealing in black and white. It's always nice to have everything under your control," says Spink.

"We feel a little lost in this public relations arena."

Spink feels universities are recognizing this need now in their training of engineers. He's aware of courses in public speaking and report writing, and of the interdisciplinary nature of new environmental engineering courses.

"Even though engineers are slow to change, they realize they have to change," says Spink.

And those who take the environmental engineering program, he says, usually love it — "because you don't learn everything about one thing. You're into your chemistry book, you're into your medical encyclopedia. It's very interesting, it's challenging intellectually, because you don't get stuck. . ."

Taking courses with people from other disciplines, learning the language of other disciplines, helps with communication too. Consultation on the job happens much more often.

"Our network has gotten a lot larger and we use it more frequently than in the past," he says.

"It's more of an interdependent team approach."

There are lots of ways to have an environmental career. It may be a simple matter of applying for a specific job — like that of a pollution monitoring technician.

It may be a matter of deciding where you *do* your job. Researchers in the West Whitecourt sulphur study continued to work in their special fields — but they operated in an interdisciplinary atmosphere, and they had to be willing to communicate and share their work.

It may also be a matter of how you do your job — and the sort of person you are.

Working in an interdisciplinary way, sharing information and results, asking endless questions of people who know far more than you do, leaving the safe confines of something you know extremely well for ground on which you are much more shaky — all of this is risky and anxiety-producing.

But in the interests of the environment, more and more people agree that it has to be done, and are willing to do it.

Gillian Sniatynski is a freelance writer and editor living in Calgary.

Careers in the Global Village

Environmental careers can be very diverse and unrelated in any obvious way, both in the things a person does and in the formal training he or she has. There are many aspects which attract a young person to an environmental career: altruism, power, "save the ———" (whales, seals, tigers, whatever), nice outdoor work, enthusiasm to learn about the amazing world around us, desire to make the world a better place, and so on. There is a great deal of personal and professional satisfaction to be gained from an environmental career, but there are also certain responsibilities and obligations which are tied up with one's commitment to an environmental ethic. This is what I would like to examine in this column.

Ethics is a very personal subject regardless of the discipline. We regularly hear about the ethical dilemmas facing the medical professions and those who deal on a daily basis with the sick and dying; we also hear about the unethical behavior of unscrupulous individuals who take advantage of others to benefit themselves. In these cases and in the case of environmental ethics, a common factor is *responsibility* or responsible behavior.

But to whom or for what are we responsible? In the examples mentioned above, there is clearly a responsibility both to and for other human beings. Environmental responsibility is harder to determine. When we interact with our environment, to whom do we account? Our environment is used and modified in many ways for the so-called "greater public good", but often the decisions for these uses and modifications become entangled in a web involving numerous individuals and levels of authority. The end result is that it is easy for any particular person in the process to feel very little responsibility for either the decision or the ultimate action.

Another aspect which has tended to cloud the issue of environmental responsibility is our preoccupation with the quick technological fix. Human ingenuity has overcome enormous odds, and the capability of our species to alter our environment may well know no bounds. Historically, Canadian literature, and indeed literature in much of the developed world, mentions human survival in the face of natural adversity. Homesteaders brought the prairie "under the plow;" we still talk of "conquering" Everest; we "tame" mighty rivers, and otherwise continue attempts to subdue our environment. But then what? A cautionary phrase to keep in mind is: "Nature bats last."

FRED KATZ

Kim Sanderson

So what motivates anyone to behave in an environmentally responsible way? "Responsibility," it has been said, "is a function of power and knowledge." On an individual basis, a person can have both the power and the knowledge to make a decision, to implement it, and can then also be affected by it. Anti-litter campaigns and other such programs have met with phenomenal success largely because it is possible to see a direct link between one's actions and a cleaner environment.

However, on a societal basis, not many of us are in positions of power. But when it comes to environmental matters, those who have chosen an environmental career have considerable knowledge. This knowledge imposes certain obligations, in my opinion, and can sometimes require difficult decisions in order to reconcile one's values and motives with actions.

Just as physicians must consider the long term effects of the treatment they prescribe for their patients, environmentalists, regardless of the discipline in which they are trained, have an obligation to keep the long term in mind. Training in environmental sciences teaches one that the expanded time frame of nature is on a rather different scale from what we normally reckon with. It may take years or decades for the effects of some human activities to register on the environmental impact scales. We have ample evidence of this from our past, and on a global basis, pesticides, nuclear wastes, toxic chemicals, soil degradation, water management, and a host of other environmental problems continue to plague our planet because not enough people with knowledge asked "Then what?"

Sometimes the answers revealed by this question mean enduring short term difficulties in exchange for future sustainability or maybe just survival. Realistically, such options may not be available to those in dire straits; in our modern global village, the decisions are then frequently removed one step further from those who are affected. Alternatively, many would consider a wiser course to have been anticipatory and preventive action in the first place. On a daily basis, we all take responsibility for our personal lives, and to the extent possible we consider the effects we will feel tomorrow due to our actions today. But environmental decisions have impacts far beyond the family unit, and we very much need people who will take responsibility for these broader decisions. "Then what?" should be the favorite and most used question of anyone who deals with environmental issues on a daily basis.

In the end, commitment to an environmental ethic means responsibility in a holistic sense. Although humans may be the primary objects, other inhabitants of our planet are also ultimately our responsibility. We will be dependent on our environment for as long as our species survives. The human will to live is very great but the possibility of mere survival without the things which contribute to our quality of life is less than appealing to many. The quality of life to be enjoyed by us and future generations will be directly linked to actions taken by people who accept responsibility not only for themselves, but for human intrusions into the biosphere, and seek to harmonize our activities with our ecosystem.

Kim Sanderson, a research officer with the Environment Council of Alberta, is on the editorial board of Environment Views.

Gail Gravelines

Preparing

You must be ready to look beyond the boundaries of a single discipline

COURTESY OF MIKE SHINTZ, PARKS CANADA

National park wardens in training for mountain rescue work.

"I've got a chance at two summer jobs. One working with a professor in a lab and the other working at Safeway. Which one would you advise me to take?" a university student recently asked Millard Wright, Gulf Canada's head of environmental affairs.

Wright's response? Take the Safeway job. Why? Because bagging groceries would give the student the opportunity to meet, talk with, and help people from all walks of life. And those skills, coupled with his scientific knowledge, would prove a winning combination in his future environmental career.

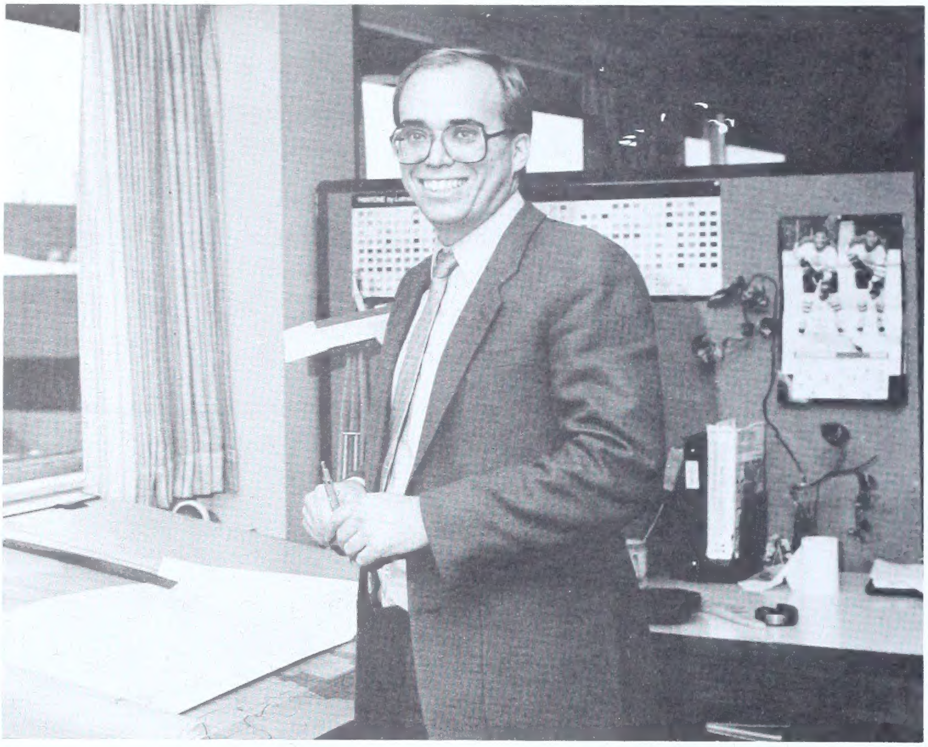
Wright's answer surprised his university student audience. But it summed up a growing awareness that anyone preparing for an environmental career must be prepared to look beyond the boundaries of a single discipline.

"There's a trend toward a greater orientation of the larger planning issues, a consideration of a broader perspective," says Tom Coape-Arnold, a Calgary-based private environmental consultant. "We need people interested in the multiple dimensions of environmental problems."

He suggests studying sociology and political economy as well as the scientific disciplines, to prepare for an environmental career.

What were the skills industry, government, and academic officials cited again and again when asked what would be the best preparation for an environmental career? A respect for other disciplines. The ability to take complex engineering or environmental concepts and explain them in layperson's terms. An appreciation of economics, politics, and sociology. And a need for people who can communicate with others from all social levels.

Some suggested students go on to get their doctorate degrees; others said a masters would be sufficient. Some saw the merits of having more social scientists in the field; others claimed social scientists are often bent on politicizing environmental issues. There were those who questioned the wisdom of seeking a career in a field with fewer jobs, paying less money,



FRED KATZ

Brian Bietz, a private environmental consultant.

than other occupations. Yet there were many who said the short-term prospects for an environmental career may look rough, but the long-term prospects are terrific.

All do agree, however, that in the 15 years since the creation of Alberta Environment and the provincial environment legislation, the work in the field has changed and matured.

"Our clients are more sophisticated, they know what they want from an environmental impact assessment," says Brian Bietz, an Edmonton-based private environmental consultant. "In the mid-seventies, it was brand new. Consultants were often academics, the clients were engineers or geophysicists. We did a lot of 'bugs and bunnies' — doing inventories of wildlife. It was interesting work. It was data collection, but it wasn't scientifically challenging.

"Today there's less emphasis on inventory and more on the physical chemical process. For instance, a client might ask if they can discharge a waste into a receiving stream. Five years ago, we would have done a fisheries survey. Now we collect waste samples, collect stream water samples. We simulate the chemical effects in a lab, monitor the water in the stream, look at specific organisms in the stream and we predict the impact of the effluent — how it will disburse, what effect it will have, how it will travel down the river, what the literature has to offer. It's a good change. Before, studies were done, but we didn't answer any questions."

Bietz's advice to those interested in an environmental career? He says there's more demand for graduates in the physical sciences — the water quality and soils scientists — than for the biological science graduate. Go for a masters degree, since "you can no longer get by with a bachelor's degree," and be "hard-nosed about the program you pick, be sure there's a job at the other end."

> *"Be hard-nosed about the program you pick, be sure there's a job at the other end."*

Tougher economic times, tighter budgets, and a general public increasingly more familiar with environmental issues have altered the work of the environmental professional.

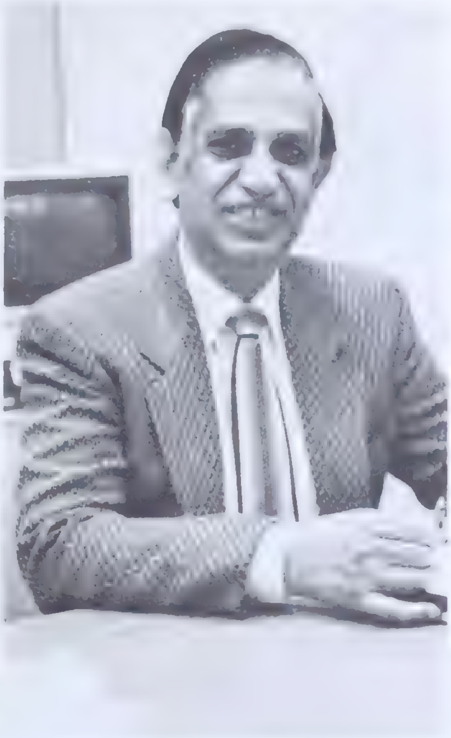
It's been a decade since Wright joined Gulf. He was the first biologist hired by the company. The changes he's noted?

Increasingly, he says, the environmental impact assessment of a project is now made during the initial stages of project planning. That's a far cry from the former practice of tagging the environmental assessment to the final phase of planning.

Engineers — who were the main professional body responsible for environmental concerns in the earlier days — now share the field with professionals from other disciplines, says Wright. Among

ALBERTA GOVERNMENT PHOTO

Millard Wright, Gulf Canada's head of environmental affairs.



SUSAN BRUN

Dr. Farooq Siddiqui

them? Social scientists handling community relations.

"We've come to see that environmental concerns manifest as social issues and then political problems," says Wright, citing the results of the Berger Commission. That study into the effects of the proposed McKenzie Valley pipeline led to national concern over the effects the construction would have on the lives of northern Canadians. "With the growth of public interest groups, came the need to hire community relations people — people who can organize a community to explain to them what a project will involve and what environmental protection measures are being taken."

Gerry Glazier was the manager of the environment and social affairs department of Petro Canada Resources from 1978 to 1986. He says that the boom years of the oil industry saw a move toward the more specialized professional, particularly those involved in Arctic oil exploration — the meteorologists, oceanographers, and other weather forecasting experts. With the decline in oil prices and the consequent decline in frontier exploration, Glazier says the trend is now toward hiring more general environmental practitioners.

His tips for those considering an environmental career? If you're looking at a specialty, consider those dealing with air and water pollution. In Western Canada, water is THE big issue, says Glazier, because so many different users are vying for a finite amount of ground water. Consider a masters in the physical sciences to get in on this area. A masters degree coupled with experience in government or consulting will be one of the few ways to break into the industry. He says a doctorate tends to lead to "over specialization."

Environmental scientist Dave McCoy of Calgary-based Canterra Energy says that though a sound scientific background is necessary, there have been times in his career when he wished he had had some background in economics.

"A company's activity is bottom-line-oriented. There have been times when I would have liked to advance an argument, that I would have appreciated a better understanding of economics," says McCoy.

Dr. Steve Hrudey, a professor in the Department of Civil Engineering at the University of Alberta, says there isn't any 'optimum preparation' for an environmental career: "Environmental activities are interdisciplinary. There is no single optimum preparation. What is needed, though, is a respect for other disciplines."

> *"Environmental activities are interdisciplinary. There is no single optimum preparation."*

Hrudey says students choosing an environmental career should first decide if they want to assess environmental problems or to develop solutions. If it's the latter, go for an engineering career. Environmental engineering — an outgrowth of sanitary engineering that emphasized ways of protecting the public's health — demands a knowledge of chemistry, biological principles, and physical principles of how systems interact. A masters degree is the working level in environmental engineering, says Hrudey. Graduates may find employment in government and industry.

What about those who want to enter the environmental technologies? Dr. Farooq Siddiqui is head of the biosciences program at NAIT (Northern Alberta Institute of Technology). Two-year programs covering three specialized areas are offered: pollution technology, fish and wildlife ecology, and lab and research science. Siddiqui says all first year students study a common subject core.

"We try to give them as broad a background as we can. But in two years we can give only so much. We look at what the

ALBERTA GOVERNMENT PHOTO

Biology continues to attract students interested in an environmental career, but the physical sciences may be a better bet.

ALBERTA GOVERNMENT PHOTO

A University of Alberta chemistry class.

SUSAN BRUN

Dr. Don Detomasi, dean of the U of C Faculty of Environmental Design, wants to give students a broad perspective.

industry needs," says Siddiqui, adding that up to last year the NAIT technical graduates, who are often employed by governments and industry to monitor air and water pollution levels, have enjoyed an 80 per cent job placement rate.

What background does NAIT look for in those wanting to study the environmental technologies? Siddiqui says good grades in Grade 12 Math, Chemistry, English and Biology, as well as a proven interest in the field, are needed.

But when it comes to the integration of the various environmental specialties during their training, there are few institutions that compare to the University of Calgary's Faculty of Environmental Design. Dr. Don Detomasi, dean of the faculty, explains that the school defines environment "in its broadest sense — it's the built environment, the products we use, and the natural environment."

Students can choose to study architecture, urban and regional planning, industrial design or environmental science. But they will study core courses together. Why?

"Most human interventions in the environment are done by groups of people," Detomasi says, adding that the student's group problem solving skills are further honed by formal group exercises often presented by actual clients. "Graduates report they find themselves better at contributing to group problem solving situations than are their co-workers from other backgrounds."

Anyone with an undergraduate degree in any discipline can enter the faculty. Detomasi says some come in with social sciences, some with humanities, others with sciences. Because of the diverse backgrounds, many students have to catch up on their drafting and drawing skills.

Detomasi's view on an 'optimum background' for an environmental career? "There's a need to train people who are scientifically knowledgeable and to develop their skills in planning, policy analysis, management and designs."

The interdisciplinary focus is put into daily practice at the Environment Council of Alberta (ECA). Research director Dave Buchwald says he looks for people with a masters degree in any "environmentally related field" — anything from the natural sciences, to political science, economics, urban planning, etc.

"Because we're looking at the broad environmental issues — like recycling wastes, or managing water resources — we move from topic to topic. We require an integration of information from diverse sources. That's the biggest change in both the federal and provincial scene: we're looking at anything that relates to bridges between the disciplines. We're looking at how to hook the pieces together to form a broad perspective."

What changes have governments noted in hiring? Marylin Munn, human resources consultant with the Alberta Departments of Energy, Forestry, Lands and Wildlife, reports that in the past eight years there's been an abundance of qualified candidates to choose from for fish and wildlife officers and other positions. That's a result of the current employment market, and the recent layoffs of Canadian Wildlife service biologists. Her advice? Take a hard look at the employment picture. Then, if you're still committed, get the training and the experience.

John Wilson, of the personnel and organizational development division of Alberta Environment, says technologists are the largest group hired by the department. Second to the technologists are the engineers.

"We're looking for directly related experience — civil engineers with experience in structural design, for instance," says Wilson.

Gail Gravelines, a former journalist, is an Edmonton freelance writer.

Norma Ramage

The Jobs:
Technical and Research

Bird-tracking to number-crunching

FRED KATZ

Lynne Dickson, a field biologist with the Canadian Wildlife Service feels her job is the "best in the world".

Assessment biologist

When Lynne Dickson is out on the job, it's all in a day's work for her to wake up on a July morning to a dozen centimetres of snow.

That's because Dickson's job with the Canadian Wildlife Service takes her to isolated areas of Canada's Northwest Territories, tracking the migratory and nest patterns of birds.

Recently, she's been spending her summers 50 kilometres north of Tuktoyaktuk on the fringes of the Beaufort Sea, gathering information about coastal birds that will help reduce any negative impact from future oil and gas development in the area.

"My job is to gather information and then advise government agencies and industry how to build and locate facilities to have the minimum impact on the birds."

To do this, she spends up to 10 hours a day every summer tramping to nesting sites, often seeing only one other person for weeks on end and sleeping in a pup tent, sometimes waking up to "60 knot winds and a mid-summer blizzard."

Dickson is out in the field every year from June 1 to the end of September, but for her, "it's the highlight of the year".

"You have to like camping and hiking and being outdoors but I've always liked doing that and it's what led me into work as an assessment biologist."

However, Dickson came to her current job in a roundabout way. "In high school, counsellors told me not to go into biology because a woman would never get an interesting field job." So instead, Dickson took a bachelor of science degree in food chemistry but worked in as many optional biology classes as she could.

> *"You have to like camping and hiking and being outdoors."*

Still hoping to get into the outdoor environmental work she liked, Dickson contacted the federal government's Wildlife Service when she graduated and took small contracts "doing the kind of work no one else wanted to do." It was during these "apprenticeships," says Dickson, that she learned her profession.

The turning point in her career came eight years ago when she got a longer term field contract in Yellowknife and convinced her superiors she was capable of doing a good job. "After that, a full-time opening came up and I was lucky to get it."

Now 39, Dickson feels her job is "the best in the world". Although she is the only woman in the eight assessment biologists in her group, Dickson feels the job is a good one for women — and for men.

"It won't be easy because there are not a lot of jobs in biology but if you really want something badly, then you can get it."

Pollution monitoring technician

John Ellingsen is a man who feels by doing his job and doing it well he's doing his own small part toward protecting and preserving the environment.

Ellingsen, 32, is a pollution monitoring technician for Syncrude at Fort McMurray. During the summer he checks air quality around the plant and in winter months he checks nearby water sources for metals, graphites or other possible pollutants.

"Even though I'm just the person in the field gathering the numbers, I feel I'm doing something in a small way to help the environment."

And Ellingsen believes that more and more people are starting to appreciate the work he and other technicians do. At one time, he explains, "I got the feeling some people couldn't see my job as valuable because they couldn't see me producing any money. But Syncrude is putting a lot of emphasis and importance on environmental concerns."

And that increasing emphasis means more jobs for monitoring technicians like Ellingsen. He got his training at NAIT in the pollution monitoring program but says if he had to do it again, he would like to combine NAIT's practical training with the kind of scientific theory gained from university courses.

Ellingsen didn't enter the pollution monitoring program until his second year at NAIT, starting out instead in an ecology course "because I've always had a great love for nature." But he discovered that "chemistry wasn't so bad" and switched to pollution monitoring where he could not only pursue his love for nature but also have a better chance at a job upon graduation.

To do that job, says Ellingsen, a person needs a concern about the environment, an aptitude for working with instruments and a willingness to run batches of numbers through the computer, sometimes, in his case, as many as 50 or 60 times a day.

Although he enjoys his work at Syncrude's environmental lab, Ellingsen says he hopes one day to work up to the management side. But in the meantime, "Doing the job and doing it well is my best reward."

Soil scientist

Richard Johnson is a man who appreciates his job but he's not sure that everyone else does. In fact, he's not even sure everyone understands just exactly what it is he does.

What he does is environmentally-related research on soil reclamation at the Alberta Environmental Centre in Vegreville. However, the problem as Johnson sees it is that too many people see the centre simply as a place that does lab work for various government departments.

Instead, says Johnson, the centre "is one of the most unique institutions in Canada with a unique mandate" to do research into all aspects of the environment.

Johnson believes that if "Alberta's economic well-being lies on the shoulders of our natural resources, then all of us as citizens have a responsibility to look at the development, marketing and above all, the preservation and conservation of those resources."

> *"In the field gathering the numbers, I feel I'm doing something in a small way to help the environment."*

Preservation and conservation are the mandate of Alberta Environment, says Johnson, and the AEC has the responsibility to do the research to help them meet that mandate.

Consequently, when he was offered the chance in 1983 to move to AEC from his job as a soil consultant with an engineering company, he "leaped at the opportunity to take a job that would let me develop my interests within that mandate."

He is now head of the soils branch of the Plant Sciences Group at AEC and his job is "to define what reclamation problems exist and identify means to resolve them."

One of the projects he is currently working on involves finding a method to remove water from oil sludges produced at the Fort McMurray heavy oil plants. These sludges — clay particles suspended in water — have created a lake 22 kilometres in area and 50 metres deep near the Syncrude plant. The lake, says Johnson, is a quagmire that fish can't swim in and deer can't walk on, a totally useless piece of land.

AEC is experimenting with solving the problem using aquatic plants that consume water and evaporate it into the air.

But this is only one of the many projects Johnson is working on and he finds his job constantly challenging. "Soil reclamation is such a young science, a brand new area and I'm getting the opportunity to get in on the ground floor."

Social impact consultant

SUSAN BRUN

Richard Roberts, social impact consultant.

Richard Roberts has a job that doesn't exist. Or so he says.

Well, not exactly. Roberts is a consultant who does social impact assessments for government and industry and he says with a smile, "There's really no such job as social impact assessor, no program you can take, no formal training. It's what I call a transfer-in profession."

He says people doing his kind of work "transfer in" after being trained as psychologists, planners, sociologists, or geographers, among other things. It's the interdisciplinary approach, says Roberts, that fits them to do the broad range of tasks required of a social planner.

This could include everything from advising an Indian band on how to best use its human resources to investigating the impact of a magnesium plant on a community's social patterns, to producing an informational newsletter explaining the effects of sour gas development, all projects Roberts has been involved in.

"The profession started out as straight social planning and now it goes beyond that. Instead of spending about 80 per cent of our time just assessing what would happen socially and economically, now our focus is shifting to implementation, to what to do to solve the problems."

And although it may not appear so on the surface, Roberts says his profession is one very much involved with the environment. While other experts may study the effect of a refinery development, say, on fish or birds, Roberts studies its effects on another animal — the two-legged variety.

And like any profession dealing intensively with people, the prime job requirement for anyone wanting to go into social impact assessment, says Roberts, is an ability to deal with people. In fact, he says with a grin, sometimes that ability is strained to the limit: one time, an angry landowner he wanted to talk to about possible expropriation for a new development chased him off his land with a shotgun.

Another job requirement is flexibility, and a willingness to deal with a wide range of situations.

The prime job requirement is an ability to deal with people.

Indeed, these two things drew Roberts to the profession in the first place. "I sort of wandered into this. All I knew was I wanted a career that worked with people. As I took courses, I realized it wasn't psychology and it wasn't sociology." Instead, he took a master's degree in interdisciplinary studies at the University of Washington that exposed him to courses like environmental planning, business management and computer applications.

Then he started learning the intricacies of his new profession by working with other consultants and planners in Seattle. "Then Richard Nixon was elected. He was voted in on Thursday and I was back home in Vancouver on Monday."

FRED KATZ

Yolanta Leszczynski's job is to make sure industries comply with environmental regulations.

Once there, he eventually started his own consulting firm, and then in 1980, founded Praxis, A Social Planning Co. Ltd., in Calgary. Praxis is a Greek word meaning "theory into action" and that, says Roberts, is at the core of what he does — examine how something will affect a community and then take action to deal with those effects.

Environmental engineer

The decisions Yolanta Leszczynski makes aren't always popular ones but they're environmentally vital ones.

That's because Leszczynski's job is to ensure that industries comply with requirements of the Alberta Clean Air Act and fulfill the environmental requirements of their operating licences.

She is one of a number of air quality control engineers who work for Alberta Environment's Environment Protection Services. Her specific responsibilities include two oil sands plants, a number of refineries, asphalt paving plants, incinerators and a coke calcining plant.

At least once a year she travels around Alberta inspecting the plants and making sure they're not polluting the surrounding air. Sometimes, she concedes, not everyone is happy to see her. "But I work for a government regulatory agency," she explains, "and I have a responsibility to the public."

And it's that responsibility, and the contribution she can make to protecting and preserving the environment, that make her job worthwhile.

"The gains we make sometimes seem very small. But then I have to take a look at the five years I've been with Alberta Environment and look at the progress industry has made in that time. Then I can see that in the long term I am doing some good."

This aspect of the work was one of the major reasons Leszczynski, 29, took the job with Alberta Environment when she graduated from the University of Alberta with a degree in mineral engineering.

"Even though I trained as a mineral engineer, I had taken some environmental courses and I was familiar with environmental issues," she explains.

In fact, she adds, it's not surprising that her job isn't completely compatible with her training considering that when she started in university she enrolled in medical laboratory science until she discovered she had "more expertise for technical matters than for research."

The other reasons she took the Environment Protection Services job, says Leszczynski, were because it was more flexible and allowed her room to grow. "As an environmental engineer, I'm not limited to one area. My job includes some administration and some managing. I have to know a little bit about electrical, chemical and mineral engineering.

"It's continually challenging," she explains, adding that she's recently decided to make her future in environmental engineering.

"Pollution is one of the most contentious and important issues of our day and there's going to be more and more attention paid to environmental engineering."

Norma Ramage is a Calgary journalism instructor and freelance writer.

Jim Wilson

The Jobs: Planning and Management

Careers that look to our future

SUSAN BRUN

Mary Axworthy is responsible for co-ordinating urban projects in Calgary.

Urban planner

Mary Axworthy has no real operating budget, but she has a direct involvement in the execution of a multitude of urban planning projects in her job with the City of Calgary.

Called simply a "planner", Axworthy is a co-ordinator whose responsibility it is to ensure that approved projects are carried through — by other departments or groups. Until recently the job didn't exist.

"We were frequently having problems getting approved plans implemented, because there was no one to take on that next step," she says. "Unfortunately in most planning departments the planners write the plan they're assigned to work on, and then have to start writing the next plan on the list — no one is responsible for keeping the project alive.

> *"The things I work on affect the quality of life and environment in Calgary."*

"And that makes my job really exciting, because you feel you're getting all sorts of things done, instead of making up plans that end up going on the shelf because no one can implement them."

Her duties include co-ordinating with other departments to see that the various parts of a project come together, acquisition of land for parks, follow-up studies that are identified in the plans, getting such details accomplished as road closures and zoning changes, detailed parks plans, and so forth.

Her department includes another planner and two planning technicians.

Axworthy's educational qualifications

include an interdisciplinary masters degree in environmental design specialising in urbanism, and a B.A. in urban studies.

She worked first for the Calgary Regional Planning Commission, writing land use bylaws for small municipalities. Her next job was with the City of Calgary's community planning division, in housing analysis. Axworthy then moved to the city's planning department, writing area development plans.

For two years she was assistant to the chief commissioner of the Calgary Board of Commissioners (senior city employees responsible for major departments), where she says she "developed an understanding of how the Calgary city administration process works and learned a good deal more about our urban planning activities."

That background, she says, prepared her for her current job.

Axworthy says there are few things in her educational or career background she would change, except for spending more time in university on environmental design issues. "That would have been an asset in giving me more understanding of total urban design," she says.

And she's very happy in her career. "The things I work on affect the quality of life and environment in Calgary, which can also affect our economic growth," Axworthy says. "And I get to work closely with people and communities, which is truly rewarding."

Parks planner

Ron Hooper spends much of his time thinking about Rocky Mountain parks.

As Parks Canada co-ordinator of the Four-mountain Park Planning Program, the 37-year-old is responsible for finding ways to provide good public access and enjoyment of our mountain resources, while simultaneously protecting the mountains, the flora, the fauna and the general mountain resource from those same people.

He also, of course, must consider ways of protecting people from the mountains, the flora and the fauna.

"A big part of my job is consulting with the interested public during the planning stages of any parks program and then keeping them informed of what we do next," he says.

He and other parks planners work to develop programs that will last 15 years or more, based on policies established by the government. "We're involved in policy implementation," he says. "We set the broad directions that can be applied directly at local levels. For instance, we establish that camping is desirable in a particular area, and the next step — building the campgrounds — is undertaken by local parks people."

And that, Hooper says, creates one of the most interesting aspects of his job. "We work with park planning teams, and we really act as planning co-ordinators, dealing closely with the people who work in parks on a daily basis, but helping them to work out projects that we've developed through a more long-term planning approach."

SUSAN BRUN

Ron Hooper is the co-ordinator of the Four-Mountain Park Planning Program.

He enjoys the opportunity to work with many different disciplines and work levels, from seasonal workers to assistant deputy ministers, from politicians to special interest lobbies, from biologists to financial administrators.

"You're dealing with human values," he says, "and the challenge becomes deciding whose set or sets of values you'll use in your planning."

Hooper has a master's degree in geography. His first job was spending four summers with Parks Canada kayaking along all of the mountain rivers in Alberta and B.C. mountain parks, and the N.W.T. Nahanni River, preparing river guides.

"That was great," he says, "but so were my next jobs."

Those Parks Canada assignments included work in its natural history department, four years as a Banff National Parks planner and many projects dealing with environmental assessment.

And that background led naturally into his current assignment when the job was created.

Hooper says today's parks planners need stronger backgrounds in the social sciences than the job required a few years ago, when biology, geography and natural history were the most common educational backgrounds.

Today's parks planners need stronger backgrounds in the social sciences than the job required a few years ago.

FRED KATZ

Carl Primus, assistant deputy minister of Environmental Protection Services for Alberta Environment.

"That was during the conservation era, when Parks Canada was putting lots of money into those areas. But while we're not ignoring conservation now, we're much more involved in studying parks use and users, tourism and the demands people place on our parks resources."

And even though coping with that change of focus can require "a willingness to accept new directions and challenges," Hooper says he "thoroughly enjoys the opportunities it provides to meet and deal with all sorts of people and places. It's a really meaningful and important career."

Senior civil servant

One does not, as Carl Primus says, generally aspire at the very beginning of an environmental career to become an assistant deputy minister of a provincial government's environmental department.

"But that's where my career has taken me, and I think it's just great," he says.

As assistant deputy minister of Environmental Protection Services with Alberta Environment, Primus is heavily involved at the upper end of managing the province's environment.

"I see my job as being translation of policies and administrative delivery of programs in the environmental protection area," he says. "That can sometimes entail interpretation and application of the policies set by the government, and providing direction to our staff along those same lines."

While he says his job is not directly one of policy *making,* he is nevertheless in the forefront of both policy development and recommendation, and is part of the broad knowledge and expertise base the provincial government uses in formulation of environmental policies.

Primus's background indicates at least one potential route to such a position.

"I've been a career civil servant for most of my working life," he says. "I started in the Water Resources division, which formed the core of what became Alberta Environment in 1971. So by luck I've been with Environment since the moment it was created."

From there, he rose through the ranks in a series of promotions providing ever-increasing opportunities to both develop and illustrate his environmental management abilities.

The educational basis for his experience is a B.Sc. in geography with a minor in geology. Much of his concentration at the time was in the field of hydrology, which is what initially took him into Water Resources.

"That educational background wouldn't necessarily point to where I ended up," Primus says. "It doesn't really prepare you for working with a staff specializing in engineering, biology, physics and so forth. But the benefit of my degree is in seeing the values of interconnecting and interrelating the various disciplines we deal with.

"What really counts most as you move up the management ladder is gaining experience, and learning to apply that experience and your knowledge — your education and everything you learn — to greater and greater challenges."

Still, there are things Primus would do differently in hindsight.

"If I had geared my career to where I am now I would have expanded my training in chemistry and a number of technical areas, because a lot of our decisions are technically related. I would also have sought more training in business and public administration, to provide myself with a better foundation from the start in the theory and practices of management."

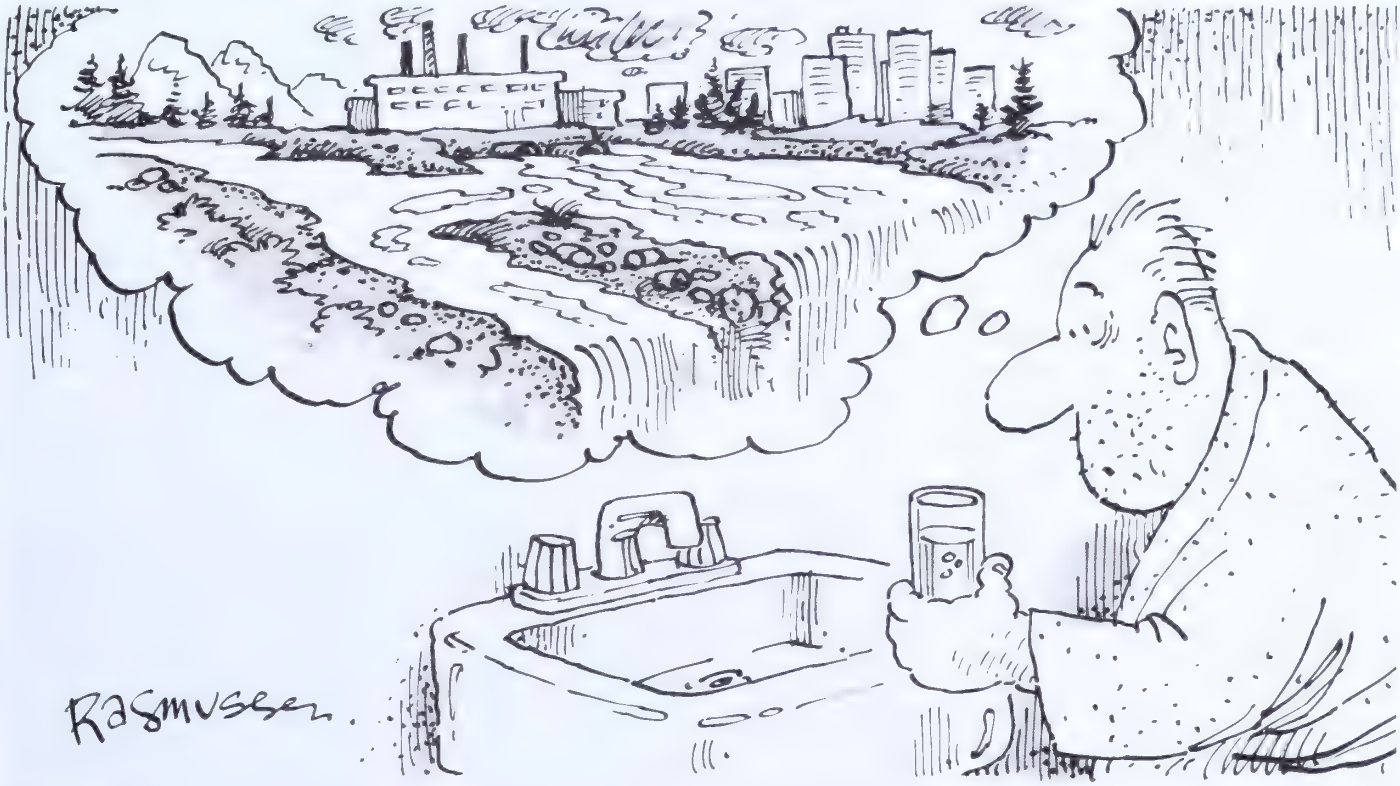
And he says all the required work would be worth it. "My job is challenging, exciting, fulfilling and at times even frustrating. But the job satisfaction is definitely there."

Jim Wilson, a former journalist, is a Calgary writer.

Gail Helgason

The Jobs:
Education and Communications

Raising public awareness about the environment.



When it comes to communicating about the environment, Dianne Pachal says seeing "every foot" of Alberta helped her immensely. Mark Lowey puts his faith in "basic language skills;" Jim Butler turns to poetry for deeper understanding; and Hugh Phillips finds some of the creative vision he needs in canoeing or cross-country skiing.

These four Albertans, all from diverse backgrounds, are pioneers, in a sense. They have the sort of jobs or approach to their jobs that really didn't exist until recently. Although their titles vary, all four are charged with educating others about environmental issues — no easy task.

They have learned that the skills they require for the job of education and communication are usually not found in any one place. A science degree may be essential to one but not another; knowing how to rally volunteers may prove of more practical value than a university degree.

> *"I was one of those who thought someone else was looking after our conservation concerns."*

Environmental advocate

Pachal, an environmental activist, looks back at her youth with some irony.

"I was a typical Albertan — not really a joiner," says the outspoken executive director of the Alberta Wilderness Association (AWA). "I was one of those who thought someone else was looking after our conservation concerns."

Today Pachal is one of a handful of Canadians who make environmental advocacy a full-time career. She wears her AWA cap half the week, acting as chief spokesman and fund-raiser for the 2,300-member watchdog group. The other half of the week she's environmental co-ordinator for several of Alberta's major conservation groups.

"You have to be self-sufficient and good

SUSAN BRUN

at scrouging," she says of her jobs. "For most of the things you do, there's no set pattern."

Finding funding for conservation projects is perhaps her biggest challenge. She's also on the telephone much of the day responding to media queries and individual concerns.

Both Pachal's formal education and informal training prepared her well for the role of environmental advocate. She earned a B.Sc. in environmental biology from the University of Calgary, but wisely studied political science and environmental law — a mix she's grateful for.

During university, Pachal found jobs with the oil and gas industry which took her all over the province. After graduation she worked as a biologist for Alberta Fish and Wildlife, assuming her present job in 1979.

"I've seen a large part of Alberta — sometimes it seems like almost every foot of it. So that helps. It gives you an understanding of the diversity of the landscape we have."

Working in both the private and public sector widened her perspective; so did volunteer experience.

What would she do differently?

"Media training. That was something I had no experience at all in."

Reporter

If Pachal is an example of someone aided by a scientific background, Mark Lowey is proof you don't need a science degree to communicate clearly about environmental issues.

The crack environment reporter for The Calgary Herald says the ability to communicate in clear English is far more important in his job. Persistence, patience and the determination to get the facts right are equally vital.

Few stories on the environment beat, unlike those on city hall or the police beat, are handed out on a plate — or press release. More often they're the result of painstaking research.

> *Lowey is proof you don't need a science degree to communicate clearly about environmental issues.*

"The beat is different in that you have to go out and look for stories," says Lowey. "I also spend a lot of time reading technical manuals."

Lowey believes he has a dual role as educator and communicator. He relishes the opportunity to write long analysis pieces about issues of keen public concern such as water quality, hazardous wastes and use of public lands.

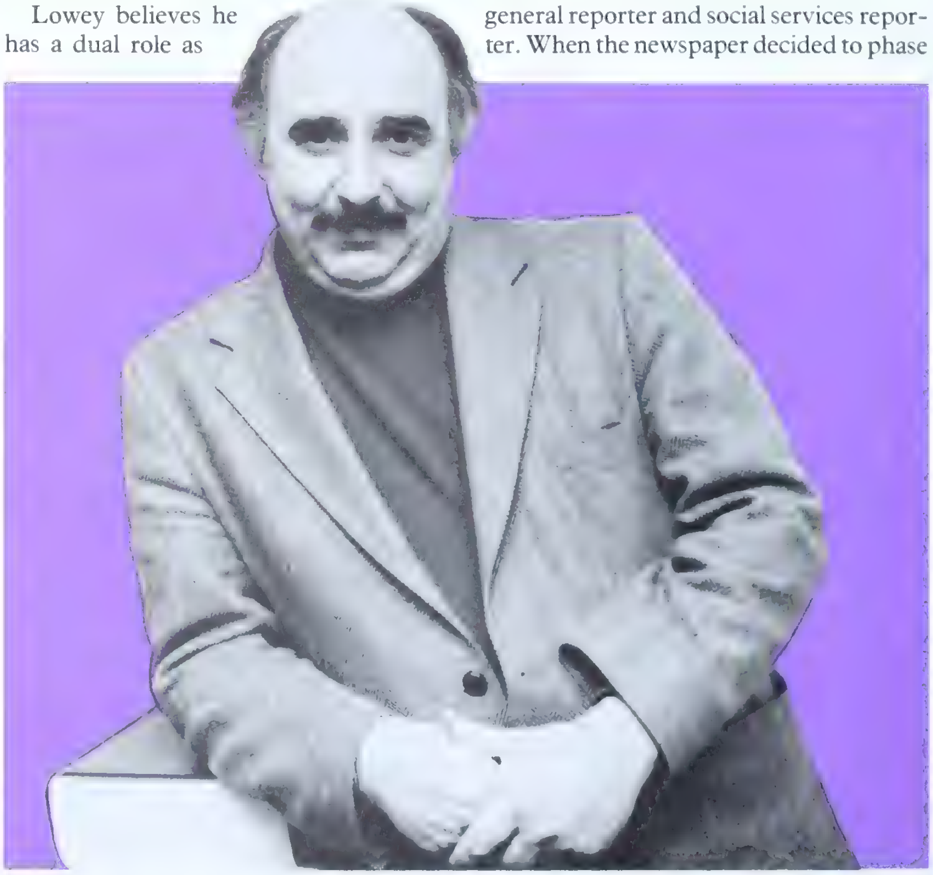
"I'll take something like the Swan Hills hazardous waste plant, for example, and just explain at length exactly what it is, something I could never do in a news story."

Lowey says the hardest part of his job is trying to balance the different perspectives — a skill he believes can best be learned by experience. He says it takes about two years for a reporter to settle into a scientific beat.

"When I started, I had much more of a 'David versus Goliath' view, the environment groups being David and industry Goliath. I find now that I make both sides work a lot harder. If they're just reacting emotionally, and not bothering to learn about an issue, then their credibility disappears for me."

Lowey fell into journalism almost by accident. He majored in English at the University of Calgary, then drove a truck and worked as a surveyor's helper, before hearing of a copy-chaser job at the Herald.

Lowey got the position, then wrote enough stories to rise from copy-chaser to general reporter and social services reporter. When the newspaper decided to phase



FRED KATZ

Dr. Jim Butler is a fierce advocate of interdisciplinary studies — his forestry students study poetry, too.

FRED KATZ

Hugh Phillips is the executive director of the educational foundation SEEDS.

"The manager of today is like an orchestra leader."

out the environment beat in 1982, Lowey fought for the job.

"They had decided the issues were becoming institutionalized. I think I convinced them that it needed to be a high-profile beat and had an important educational component."

Lowey credits his arts background for giving him the language skills he needs. But he'd take more science courses if he were doing it all over: "I'm not sure if that would have helped me write stories . . . but it would have given more insight into the scientific mind."

Forestry professor

While Dr. Jim Butler focused almost exclusively on science in his early career preparation, he is today a fierce advocate of interdisciplinary studies for environmental careers.

He recommends that forestry students at the University of Alberta take electives in subjects like music or literature. Poetry selection counts for five per cent in his course on conservation and recreational use of wildlands.

"The manager of today is like an orchestra leader," says Butler, an associate professor of parks and wildlife with the U of A's Department of Forest Science. "He has to be able to orchestrate more diverse resources than ever before."

Butler cites the example of eagle conservation in Glacier National Park, a project which must consider at least 10 agencies in two countries.

"We used to try to give everyone an answer book. There are no answer books any more. No two situations are identical."

Students can learn how to design a campground out of a manual, he maintains. But no single book can teach a wide perspective of society. An appreciation of history, the humanities and the arts can help.

"That's where we're going, toward a society of wider perspectives. Universities must not just train narrowly, but educate broadly."

Butler's own background sharply reflects his beliefs. After obtaining an undergraduate degree in zoology and wildlife science, he worked as a park naturalist before going back to school to earn a masters degree in the humanities. The dramatic switch was hastened by the realization that friends who read poetry appreciated nature at a deeper level than he did.

"They saw more when they looked at a hillside. I realized: 'By God, I'm cheating myself.'"

Butler went on to earn a doctorate in outdoor recreation. Today his teaching load includes introductory forest science, wildlife, recreational use of wildlands and interpretation. His role as an international wildlife and parks consultant takes him as far afield as China and Java.

If he had his resource management career to prepare for over again, Butler would pay more attention to integrating music, the arts, literature and the humanities into his other studies: "There are a lot of things I'm catching up in."

Environmental educator

Like Lowey, Hugh Phillips finds himself in a job he never dreamed of doing. A former social worker and elementary school teacher, he is now at the hub of a national educational institute which influences how many Canadian children view energy-related environmental issues.

Phillips is executive director of the Society, Environment & Energy Development Studies Foundation (SEEDS), a non-profit group which produces curriculum material aimed at making school children more knowledgeable about energy issues. More than 300,000 children across Canada learn about energy and environment concerns from SEEDS material.

Phillips holds bachelors' degrees in arts, social work and education and a masters of science, with a major in environmental studies. But his workdays sound more like those of a business administration graduate: about a third of his time is spent fund-raising, the remainder on liaison work, marketing and managing staff.

As a teacher, he'd been involved in pioneering outdoor education programs for children in St. Albert. The enthusiastic way they responded made him aware of the need to begin environmental education at an early age.

So in 1979 Phillips took the SEEDS job for one year. He's been there ever since. He'd already made one career switch from social work, and says both teaching and social work provided needed experience in dealing with others.

"People skills are number one. All the way from being able to present ideas to people, to being able to relate on an ongoing basis."

Leadership qualities are also essential. A graduate of Outward Bound, Phillips believes leadership skills can be taught, at least in part. He backs that up by teaching courses in outdoor leadership at Blue Lake Centre near Hinton.

Regrets? Phillips wishes he'd focused more on environmental courses and acquired public relations training. He has no regrets, however, about his varied background. Each path taken seems to help in a position that requires a bit of everything, from salesman to counsellor.

Gail Helgason, co-author of three outdoor guidebooks on Alberta, is an Edmonton freelance writer.

Eric A. Bailey

The Jobs:
New Professional Specialties

The professions meet the challenge of a changing environment.

Lodgepole, Pincher Creek, urea formaldehyde foam — items in a long list sent to try us. The list has also tried two of the world's ancient professions, creating new specialties within them.

It is no longer possible to think of the accidental release of toxic waste, a big oil spill, or the large-scale spraying of pesticides without thinking of illness and lawsuits. Hazards in our environment — where we live, work or only visit — have led to the recent growth of environmental medicine and environmental law.

In another area, the urban planning and architecture professions are also changing to accommodate a growing interest in the environment.

SUSAN BRUN

Dr. Don Johnston, displaying part of a collection of noxious substances that he has investigated over the years.

Environmental Medicine

"Back in the '60s and '70s, we worried about how we were affecting the environment. Now we worry about how the environment is affecting us," observes John O'Laney, director of the environmental health division of the Edmonton Board of Health.

"Public health agencies have traditionally been concerned with preventing communicable diseases caused by microbes. Now we also look at physical and chemical agents. We put teams together to look at these things.

"I don't think anyone can specialize in environmental studies; rather you specialize in one area and borrow the skills of many other specialists."

The list of specialists is daunting: health inspectors, environmental epidemiologists, inhalation toxicologists, contact toxicologists, industrial hygienists, respiratory specialists, physicians, engineers, pharmacologists and more. Lots more.

A good environmental medicine story makes a great detective story. Overworked doctors and public health inspectors battle against the odds with few clues and conflicting opinions from a vast cast of specialists and experts.

A good environmental medicine story makes a great detective story.

"One of our problems is that technology has raced ahead of the medical literature — we are able to measure agents in the environment at such small concentrations that we have no idea what the possible health effects might be," says O'Laney.

Just how much of a thing is too much is a vital question in environmental medicine. While such heavy metals as lead, mercury and cadmium are all around us, they are usually present in such small concentrations that we aren't affected. Higher concentrations or prolonged exposure may cause neurological disorders and organ failure.

Formaldehyde fumes can cause headaches, nausea, rashes and breathing problems. Many people who insulated their homes with urea formaldehyde foam experienced these symptoms. However, some people show the same symptoms when exposed to much lower concentrations given off by such products as particleboard and permanent press clothing. Dr. Don Johnston, a clinical assistant professor in community health sciences at the University of Calgary, says some agents have always caused human health problems:

sunlight can cause skin cancer; high elevations can cause altitude sickness; and even poison ivy can be life-threatening.

Recently, though, man-made substances have posed serious problems. As examples, Dr. Johnston cites a chemical used in vinyl manufacturing which causes a rare liver cancer in workers; a compound used in auto body shops which can cause severe symptoms of asthma; and wood shavings and sawdust which after prolonged exposure may cause asthma and a unique form of cancer.

"If someone says something makes them sick, we have to find out how," Johnston says as he uncaps a jar of foul-smelling liquid for you to sniff. He collects samples of substances workers have brought in over the years, complaining it caused their illnesses.

"The problem is, if you're looking for subtle cause and effect relationships, you can't get very far with one person — you have to step back and look at a group — newborns, old people — who's affected, how?"

They have to find out how much of an agent causes a health problem, who it places at how much risk and how important the risk is. Someone must finally look at the costs involved in changing the risks, whether it is possible, feasible or worthwhile to do so.

An expert in environmental health is expected to take sides. "For sure, one side isn't going to like your answer," Johnston sighs.

There have been important successes in the field of environmental medicine. Present steps to curb exposure to asbestos means that certain cancer rates will drop significantly within 10 years.

As a career, environmental medicine offers the challenge of breaking new ground in an increasingly important field. "You have the potential to really expand practical knowledge, and you gain a great deal of satisfaction in working with groups," Johnston says.

Now, however, there are few physicians specializing in the field in Alberta, most of an estimated 15 working with government or large natural resource companies. But if trends continue, the field will grow.

Typically, engineers and chemists are attracted to environmental medicine, going on to medical school after taking a B.Sc. After medical school, a masters program in occupational health is the usual next step. According to Johnston, Johns Hopkins University may offer the best occupational health program in North America, while in Canada the University of Calgary has a good program.

John O'Laney says two schools in Canada certify public health inspectors: the British Columbia Institute of Technology in Burnaby and Ryerson in Toronto. He also says more and more public health inspectors are pursuing graduate work in specialized fields such as environmental or occupational medicine.

> *Most health workers see patients on an individual basis but environmental health workers can affect whole communities by their work.*

FRED KATZ

Jillian Flett

Most health workers see patients on an individual basis but environmental health workers can affect whole communities by their work.

"The public has to rely on us to let them know the risks or protect them from danger," says O'Laney. "People have a right to expect a good quality environment and that's what we're in business for."

Environmental Law

Even fewer lawyers than doctors paint "environmental" on their shingles in Alberta.

Jillian Flett, legal education coordinator for the Environmental Law Centre (ELC) in Edmonton thinks there are only three. And they all work at the centre.

"Environmental law is land use planning law, pollution control law, administrative law, and municipal law all rolled into one," she says, and while many lawyers list their preferred area of practice as one of those, few claim environmental law as their specialty.

One good reason may be that Alberta produces relatively few environmental law cases, making it not a very lucrative profession as yet.

Flett defines the environment as "both the outdoor environment and the home and work environments which affect people's health.

"We're concerned with preserving the existing environment as well as pollution control and reduction of impacts in new developments."

Lawyers at the ELC, which is funded primarily by the Alberta Law Foundation, like to get involved in education programs, conduct seminars and speak at conferences, especially about public advocacy and how groups can become active in issues related to the environment and environmental protection.

"The centre has two main directions," Flett says. "We believe there should be public input in environmental law and we have geared the centre toward environmental protection."

They have an environmental law library which is open to the public. Aside from books, other documents and a large periodical collection, such items as the final report of the health investigation at Pincher Creek can also be found upon their shelves.

Flett says environmental legislation in Alberta needs considerable reform and much of the centre's research is directed toward law reform.

"My job is about 50 per cent research and 50 per cent public information," said Flett. As well as helping people get accurate information, the ELC "fights for public involvement and full public access to information about environmental issues."

Flett says environmental lawyers are generally people "concerned with social issues in many respects who have an interest in law reform.

"You often pick up some esoteric specialties for a lawyer," she said, mentioning chemistry, biology and epidemiology among others.

Flett herself graduated in zoology from the University of Alberta, having worked summers as a naturalist at the John Janzen Nature Centre in Edmonton, and went on to take law at the U of A. Shortly after articling in private practice in Edmonton, she joined the ELC, becoming an environmental lawyer by profession.

Flett thinks that lawyers can serve the cause best by helping to resolve conflicts through negotiation, mediation and law reform rather than through litigation. As public awareness of issues in environmental protection and environmental health grows, the need to resolve conflict will also grow. Whether resolutions are made around a conference table or before the bench, the need for environmental lawyers to aid the process will certainly grow as well.

Environmental Design

Out on the bald-headed prairie, a herd of cattle feed and bed down by a shed that makes the best of the environment: it sits in a sheltered coulee, its low back cutting the cold prairie wind and its high, open front welcoming the warming winter sun.

Not far away, the farmer's two-storey house juts out on a bare ridge, unprotected, right in the teeth of winter wind and summer heat.

Bob Kirby, program director of architecture in the faculty of Environmental Design at the University of Calgary, wonders why so much prairie architecture looks as though it belongs somewhere else.

"Architecture is part of the environment. We need to understand the land and design structures that capitalize on the landscape without harming it," says Kirby.

Little more than a decade ago, urban planning and architecture weren't necessarily careers for people concerned about the environment. Now, these professions have become vital to energy conservation and environmental protection.

"We have to find an architecture for Alberta that considers the sun and wind and cold of the prairie and the snow load of the mountains. We have to understand the forces coming at us from society and the space around us and find an expression of all this in architectural form," Kirby said.

Energy efficiency and sensitivity to the environment in the design of new homes may seem like concerns for people intending to build houses in the country, not housing developments in towns and cities.

Not so, according to Bill Ashton, senior economist with Alberta Municipal Affairs. Ashton has applied environmental concerns to the design of an urban subdivision.

The northwest subdivision in Hanna was designed to conserve surface water, recycle solid waste, and let topography, wind, sun and drainage help determine landscaping, street patterns, and the location of low and high density housing, public buildings and commercial developments.

"The word urban is only a name for a place in space," says Ashton, who found that towns are "only an extension of the farmyard where people come to shop and do business."

He also found that planning a development with water conservation and energy efficiency in mind didn't seem at all radical to local residents. He said "people were naturally in tune with their environment," citing the fact that residents of this arid region use less water per capita than anyone else in Alberta even though domestic water isn't in short supply.

Ashton draws a triangle to explain the basic elements of urban planning — he puts man, the environment and technology at the corners and shows the cause and effect relationships that exist between them.

"Man's own objectives for personal land use take precedence over the other factors," Ashton says, but the best urban design accommodates the technology needed to maintain the community and recognizes the impact of the environment on man and technology and the impact of those two on the environment.

Land use planners and architects can have a lasting effect on the environment. "Ours is one of the few professions where the major interest is the future," said Ashton.

He also stresses the need for skills from many disciplines in urban planning. "The planning community is a mixture of planning school and geography graduates, and technologists who have worked their way up." Ashton himself graduated from the environmental design program at the University of Calgary where Bob Kirby teaches.

Kirby says: "Schools argue about how you should train an urban designer — as an urban planner first or as an architect first. At the U of C, it's a collaboration between both." Earth science, planning and architecture combine in the environmental design faculty and students from each discipline interact.

SUSAN BRUN

Bob Kirby and a design student in the U of C Faculty of Environmental Design.

"There's an incredible variety in architecture in terms of kinds of people, personalities and backgrounds," says Kirby. "Basically, you get to be an architect by getting an undergraduate degree and then entering an architecture school.

"There's not a lot of bucks in architecture, especially with Alberta's economy the way it is now, but the reward is the work itself."

That work may lead to an Albertan architecture that works with the environment instead of against it and, as Kirby hopes, will somehow "make a building look like it belongs in this environment."

Eric Bailey is a freelance writer specializing in outdoor and interpretive writing, working from Alder Flats, Alberta.

Eric Bailey

The Jobs:
Environmental Enforcement

Our men (and a few women) in uniform.

On a given summer day in Banff, a warden might rid a picnic site of a nuisance bear, pull an injured climber off a cliff, fill out the inevitable report and round out his day by having a bottle thrown at him while he's trying to deal with rowdies in the campground.

The hours can be long, the danger extreme and the paperwork mountainous. But 800 people applied for the job the last time the national park service held an open competition in Alberta.

A national park warden's duties include natural resource management, public safety and law enforcement. Mostly, wardens work outdoors, often in remote areas. And they wear uniforms.

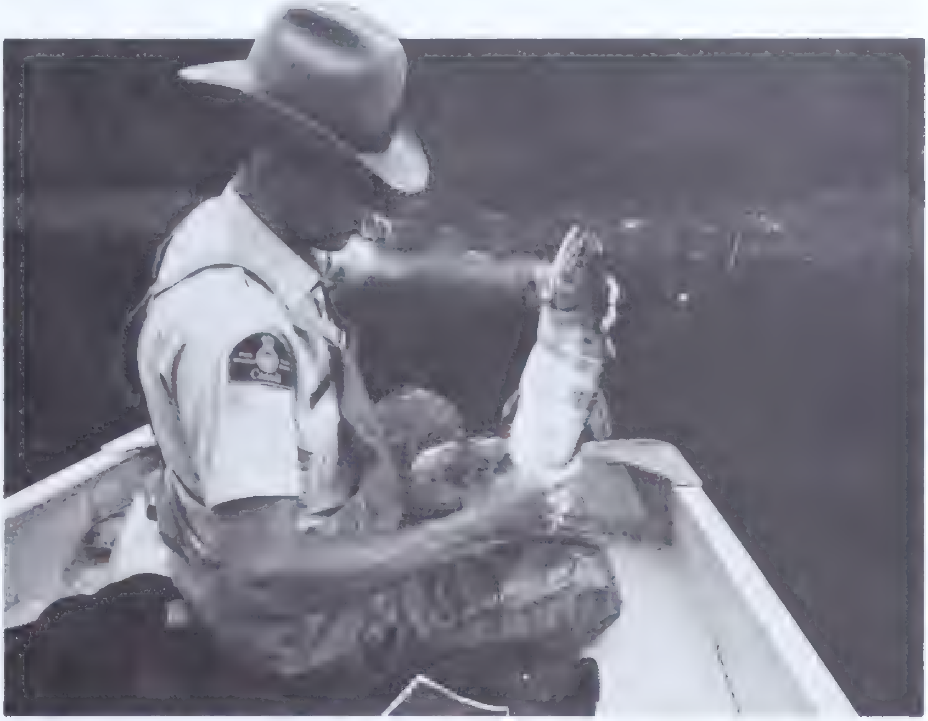
The uniform and the duties put wardens in a narrow job class shared with provincial forestry officers, fish and wildlife officers and park rangers. Together they number about 570 full-time officers.

These four services have something else in common: they regard themselves almost as an environmental elite. And they're not alone in that feeling — nearly 2,000 Albertans applied for only about 50 openings in these services in the past year.

Park Wardens

Mike Schintz, warden operations manager for the western region of Parks Canada says turnover among full-time wardens is low and the size of the service remains static at about 140 full and part-time wardens in Alberta and BC. Furthermore, vacancies in permanent positions may be filled by qualified civil servants laid off in other departments.

Throughout the century since the first national park was established, wardens have been expected to be jacks of all outdoor trades. Clearing trails with an axe and patrolling the back country on horseback has mainly given way to more modern duties. The current list includes monitoring water quality, forest insects and wildlife; avalanche control; search and rescue; pollution control; seizures and arrests under federal and provincial legislation; and fire suppression.


COURTESY OF MIKE SHINTZ PARKS CANADA

A Parks Canada warden examining an illegally-netted fish.

The national park service still raises horses for the wardens at the Ya Ha Tinda Ranch near Sundre, but four-wheel drives, snowmobiles and helicopters carry wardens to their jobs more often these days.

Winning a spot in the warden service means beating lottery-like odds. The lucky few will spend years in seasonal positions waiting to compete for an opening in the full time establishment. The difficulty of gaining entry, the tradition, the shared danger and specialized training nurture the pride and commitment that keep wardens in the service all their working lives. Said Schintz, a life-long warden nearing retirement: "There's none better in the world."

Forest Officers

Any provincial forest officer would cheerfully challenge that assertion.

Brydon Ward, assistant director of the Alberta Forest Service's program support branch, says: "If you choose a career in forestry, you're a special kind of person.

"You have to make a commitment to the environment. You're not in it for the money. It's hard on your family because you're expected to move around a lot. At times you're totally isolated and sometimes you're required to deal with people in difficult situations."

That being said, Ward declares: "It's a great life."

But it's a hard life to get into. Although the forest service qualified 27 candidates

ALBERTA FOREST SERVICES

Officers in the provincial forest service (above and opposite) describe their jobs as "a great life".

in their annual competition for forest officers this year, there were no vacancies, no hirings and the service may not even hold the competition next year.

Alberta's 261 forest officers patrol and manage the large provincial forest reserves in the west and north. Forest disposition and protection, land use management, recreation development, reforestation and silviculture are some of their major responsibilities.

Park Rangers

Although Alberta Recreation and Parks hired about 40 rangers to serve in provincial parks last summer and brought back another 70 or so from the previous summer, none of these seasonal rangers have been invited to join the ranks of about 100 full-time rangers in the system.

"We're just not hiring," said Gerry Kendall, security service co-ordinator for Alberta Recreation and Parks. "We haven't hired a permanent park ranger in at least three or four years. The whole provincial system is in a no-growth situation and our department is part of that."

Kendall says provincial park rangers provide visitor services and security, manage natural resources, maintain facilities and supervise park staff. "We welcome people to parks and try to be good hosts. We also provide a secure environment for park users."

> *"We haven't hired a permanent park ranger in at least three or four years."*

That often involves a ranger's least enjoyable duty: law enforcement.

"In years gone by, we emphasized resource management and visitor protection but now the emphasis has shifted to resource protection and visitor management," Kendall says.

Out of five million visitors to provincial parks each year, only about 2,000 are warned in writing about their behaviour, receive tickets, are evicted or arrested by rangers. Kendall says the recently implemented Parkwatch program has helped keep these numbers low.

Fish and Wildlife Officers

The service placing the greatest emphasis on enforcement (out of necessity) is Alberta Fish and Wildlife. The qualifications they look for in potential officers reflect that emphasis.

"We look for people who have a special aptitude for law enforcement, who can collect facts and make a decision about those facts without having to consult others for direction," says Jim Nichols, standards and procedures section head at Alberta Fish and Wildlife.

In addition to routine game law and regulation enforcement, fish and wildlife officers often work under cover. They may pose as buyers of contraband wild meat or poached trophy heads, often working with other agencies, sometimes outside the province and the country.

"We also do a lot of deterrent work; it's the proactive part of the job," said Nichols.

They participate in hunter education programs in Alberta schools and established the Outdoor Observer program (the public can report fish and game law infractions by phoning the Outdoor Observer toll-free number). Perhaps a Fish and Wildlife officer makes his biggest impact as a deterrent simply by being seen. The familiar green and white trucks, service uniforms, highway check stops and helicopter patrols maintain the service's profile, sometimes out of proportion to their numbers.

Nichols points out that fish and wildlife officers don't deal with enforcement all the time — they have important responsibilities in resource management and community relations. However, his department will only hire resource law enforcement graduates from Lethbridge University and Lakeland College.

Training

The other services are less specific about the schools applicants should attend. Provincial park rangers require a minimum two-year diploma in resource management from a recognized college or institute such as Lethbridge, Lakeland, Mount Royal and Grant McEwan colleges or NAIT.

Park wardens must have a minimum of two years' postsecondary training in natural resource management or one of the natural sciences, although many successful applicants now have university degrees. Both Parks Canada and Alberta Recreation and Parks look for experience in natural resource management and backcountry travel.

The Alberta Forest Service requires a two-year diploma from a recognized school of forest technology to qualify for a forest officer's position — most forest officers in Alberta are hired from NAIT's forest technology program.

ALBERTA FOREST SERVICES

Too Much Tradition?

All four of these uniformed services have been getting more and more applications from women who meet their basic requirements for employment. However, the number of women working in this field remains minuscule. Counting seasonals, about 35 of 750 officers in all four services are women. In permanent positions, women account for fewer than five of about 570.

Staffing officers say these traditionally male careers have only recently interested a significant number of women. Offering no explanation, one staffer said: "women tend not to last very long in the service."

Regardless of gender, entry into these services is so difficult now that your chances of seeing a woman in one of their uniforms will remain no better than about one in a hundred for quite some time.

Future Trends

A new uniform is now growing more important in resource protection and enforcement in Alberta - the simple white lab coat.

As legislation curbs activities which degrade the environment, the need to detect and correct problems grows — as does the need for technicians, technologists and scientists to staff detection programs.

Robert N. Briggs, Director of Pollution Control at Alberta Environment says his division alone employs 180 people and "all of them, from secretaries to technicians direct their efforts at ensuring industry compliance with standards.

COURTESY OF MIKE SHINTZ PARKS CANADA

> *"In years gone by, we emphasized resource management and visitor protection but now the emphasis has shifted to resource protection and visitor management."*

"It's a good job for people interested in protecting the environment," he said, adding that about half his work force is in the field at any given time.

Most pollution control staff are NAIT or SAIT graduates but many are also engineers and biologists.

Women take a stronger role in pollution control than they have in the traditional services. Over 25 per cent of technical and managerial staff in Brigg's division are women.

Briggs also feels a sense of accomplishment in the field of regulation may be easier to achieve than in traditional natural resource law enforcement because "success is measured not by the number of prosecutions but by how clean the environment is."

Services like pollution control may become the warden or ranger service of the future — dedicated, highly trained men and women protecting natural resources and public safety. Risk, challenge, controversy and some truly great detective stories may foster the kind of romance that now surrounds the senior services.

Eric Bailey is a freelance writer specializing in outdoor and interpretive writing, working from Alder Flats, Alberta.

Helen Corbett

The Environment Portfolio

The view from the legislature.

ALBERTA GOVERNMENT PHOTO

This 1975 photo (Bill Yurko centre) commemorates the signing of the Capital City Recreation Park agreement.

Not long after Bill Yurko took over the fledgling department of the environment in 1971, he recognized the resistance he would encounter in moving legislation through cabinet without the blessing of Premier Peter Lougheed.

"The first month, I threatened to quit," recalls the metallurgical and nuclear engineer, now temporarily retired from the political arena. "I walked into Peter's office and said if he wanted somebody else, let him give the job to them, because I was going to be very forceful. He looked at me for about two minutes and then said, 'Now get out there and do your job.' He gave me literally a free hand."

Thus begins our backroom journey into life as a politician who takes on the environment either as minister or opposition critic. How life is made easier — or thornier — by environmental groups. The measures used to induce industry to co-operate. How one's own cabinet colleagues can present more roadblocks than the most obstinate of industries or vehement of pressure groups. In short, the joys and pains of heading — or criticizing — this most controversial, regulation-bound and challenging of departments, whose tentacles reach into virtually every other department of the government.

When Bill Yurko was chosen to head the environment department in 1971, he inherited a portfolio established by the Socred government just prior to its 1971 election defeat. As an opposition MLA, Yurko had already displayed his interest in the environment, having introduced a private member's bill called the Clean Air and Clean Water Act. As an engineer he had seen at first hand the destruction caused by Canada's first nuclear power accident at Chalk River in 1952.

"When I came into politics, it wasn't a case of learning," says Yurko. "I knew what heavy concentrations of industry (such as) in New York would do to an area, I knew what transportation and massive road systems with cars producing pollution would do to an area. I was involved in the most concentrated area in the world: New York and New Jersey. So I brought the first-hand experience directly to the department and I didn't have any difficulties convincing any company, any manager, plant president or any cabinet minister. In most cases I was way ahead of them in terms of knowledge."

Yurko saw environment as "the very nature of how we grew and why." His portfolio would not just address "environment" *per se*, but expand into its many social and biophysical complexities. He could see every reason to encourage industrial growth outside the major cities, to allocate funding for capital city parks and rapid transit, and to revive small towns with sewage and water lines. Protection was inextricably bound with growth.

"The portfolio can be as big or as small as the minister makes it," say Yurko. "If the minister is strong and knowledgeable, the portfolio becomes macro if you wish. It literally affects every other growth department."

Some of the legislation and policies established through his four-year tenure included control of industrial pollution at the source, a "polluter pay" concept, public access to industrial pollution data, public involvement in environmental manage-

ALBERTA GOVERNMENT PHOTO

Alberta Environment Minister Ken Kowalski.

ment through the Environment Conservation Authority, reversal of growth concentration in cities by providing sewage and water to towns, recycling of beverage containers, water management, and what Yurko calls "macro management of the environment": ring roads to encourage heavy trucks to skirt the cities, capital city parks, rapid transit and industrial corridors.

Dave Russell took over the portfolio in 1975, finding the area "pretty new" but approaching it with "some sympathy as an architect and landscape architect."

Russell found most of the major programs in place — land reclamation, environmental research trust, water resources, container recycling — and saw his four years as "a term of carrying out projects that had been started prior to my term.

"The Red Deer River dam was of course the big thing we got going during my term, and had incredible public hearings and a lot of controversy, a lot of ill will. But we went ahead and it was started just as I left. The problem with the Environment Conservation Authority was there during my term. We turned it into the Environment Council of Alberta and kind of clipped its wings a bit. And the preliminary work was done on the Old Man River Dam during my term and those were all big, contentious things but we seemed to weather it."

As an opposition MLA, Yurko introduced a private member's bill called the Clean Air and Clean Water Act.

Jack Cookson launched his career as minister of the environment in the middle of the Lodgepole sour gas blowout in November 1982. Environmental controversies were, however, not new to him, as he represented the Pincher Creek-Crowsnest area of Alberta where gas processing, coal mining and water control issues had surfaced before. The location of a special wastes plant in Swan Hills and the approval of the Oldman River dam were both "controversial yet very important" decisions.

ALBERTA GOVERNMENT PHOTO

Opposition environment critic John Younie.

He feels the creation of the acid deposition research program in 1983 was an important initiative he took as minister.

"We brought together world-renowned scientists to address questions of acid rain and acid deposition, which resulted in the medical diagnostic review of the concerns of the Twin Butte area down in Pincher Creek."

Cookson took on the portfolio with a background in farming and teaching. He found the area familiar because as a farmer, "you work with the environment all the time, except you're dealing with a small situation, and when you're dumped into that (portfolio) the situation is compounded and you see the accumulation of problems."

Cookson found the job one of enforcement and administration of 13 pieces of legislation. "It was like the attorney general's office, a lot of enforcement."

In his three-year term, the establishment of a special wastes plant was the major undertaking of his ministry. While the concept generally met with approval, every proposed location drew opposition from local communities or his own caucus colleagues.

"I finally went to the premier and said, 'If you want to move on this legislation, I have to have the total support of all the departments.' He says, 'You've got it.' I didn't want to waste two years of my life, harassed from one committee to another, to one cabinet meeting back out to a caucus by an individual minister who is not interested in the business. So I got that piece of legislation through.

"If I went back in tomorrow morning, I'd be a lot tougher on my own colleagues. It's the only way you can do it."

ALBERTA GOVERNMENT PHOTO

Dave Russell (third from right in a 1979 photo) has a background as an architect and landscape architect.

ALBERTA GOVERNMENT PHOTO

Jack Cookson accepting a gift at his retirement in 1982.

Russell also recalls a tension that exists between departments,particularly when Economic Development and Energy and Natural Resources have different approaches to the environment than did his own department.

"Generally we got along pretty well," says Russell. "I was a member of the economic planning committee of cabinet so whenever an industrial proposal came forward I was always in there from the ground floor, for briefings and decision-making."

John Younie is something of a new political phenomenon in the provincial environmental scene. He is the first elected opposition member designated as an environment critic and he came into the job somewhat unexpectedly.

"I was a little surprised at first that I was given it," says the New Democrat MLA. "I'd requested education because I'd been a teacher for 14 years and I requested environment second because of my interest and because I'd been able to make it a bit of an issue even in an urban riding.

"I thought perhaps (Ray Martin) had matched me with (the present environment minister Ken) Kowalski because we both have similar blustery approaches in the House. I found out later I was the only person who had it down even as a second choice!"

Younie now regards his choice as politically astute, as "the environmentalists are literally heaping my desk with valid and reasonable issues to be going after the government on. So it's made my job sort of easier and more difficult in that I can hardly keep up to all the issues being brought to me."

In the adversarial style of our political system, Younie makes use of "pressure and embarassment" in the legislature or media to "get the government to take environment responsibly." He feels this approach has been effective in pressuring the environment minister to call an environmental impact assessment on the Bradbury Industries chemical plant and to investigate the closure of a toxic chemicals plant in Gleichen.

Jack Cookson launched his career as minister of the environment in the middle of the Lodgepole sour gas blowout.

"In a way, I see my job as complementing the minister's work," says Younie. "He toots his horn when he does a good job. I toot his horn when he does a bad job. This approach may provide the best job of protecting the environment."

Kowalski says the opposition critic "has not affected my job a bit.

"I think that my personal discipline and my personal approach to life has always been that you do what you do and you do it very well. My personal target is simply to be the best that there ever has been in the area.

"I have been involved in government since 1974 in a variety of capacities so I always had a periferal attachment with the Department of Environment," he says. "There wasn't a learning curve I had to go through (nor was this) a massive subject that would scare me. I just went to work."

He singles out two qualities he feels are important to his job: communicating and listening.

"If there is going to be a confrontation issue, I have as much responsibility to understand what it is the person or group is trying to convey as I have in conveying what my position or decision is. And I am very flexible in terms of communication. Part of that requires the ability to change your mind or position. I'm not married to very many dogmas."

One of the biggest learning experiences of the portfolio for Dave Russell was "the effectiveness of very small protest groups." Public hearings on the Red Deer River dam, for example, brought out "maybe 27 groups in opposition and three groups in favor. And the 27 groups in opposition were all formed I think in the University of Calgary."

Why does this particular department draw so many critics?

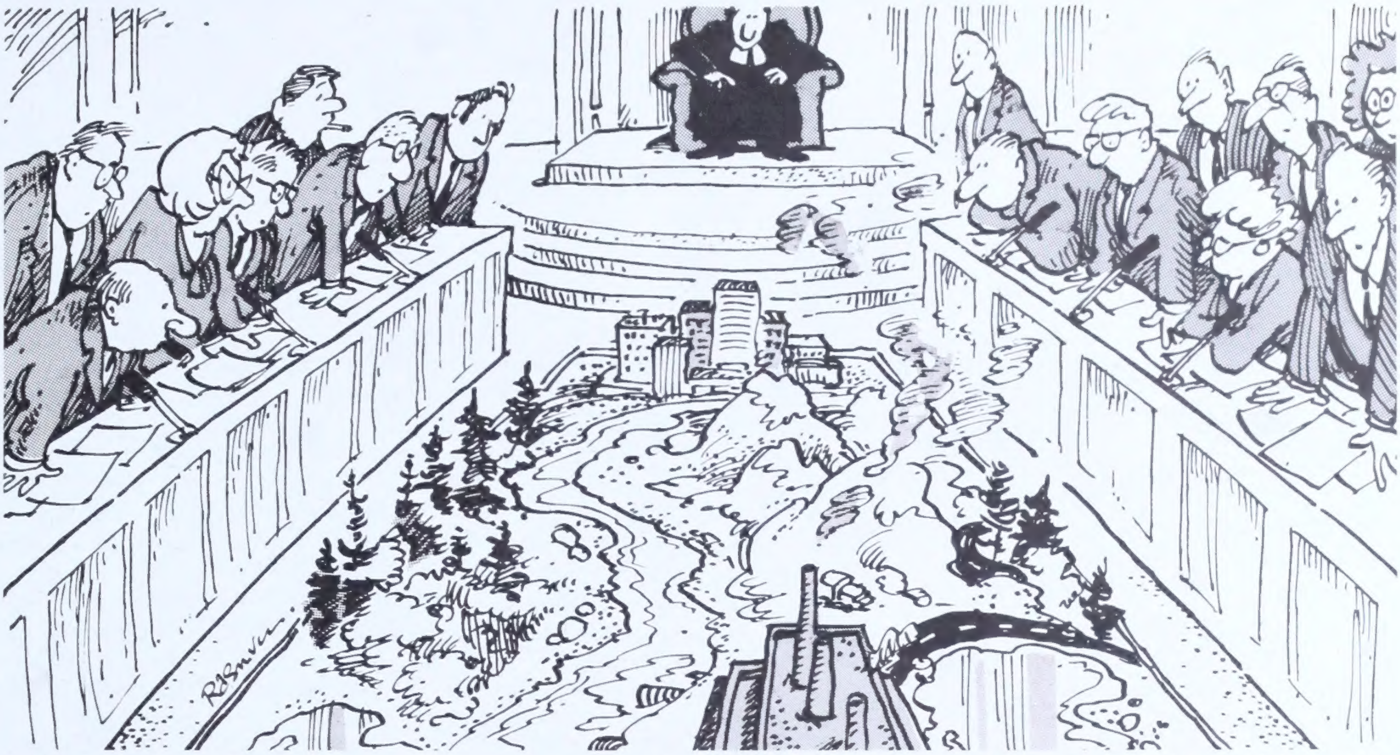
"I think there's been so much good news coverage on a world basis about the depreciating quality of our nice lakes, the fact that our air is getting dirty," say Russell. "People have travelled more and seen what industry has done to beautiful parts of the country by leaving messes behind."

Jack Cookson found "some of the critics as guilty of pollution as the large industries.

"They don't see it, of course. They tend to look at industry and of course, it's politically oriented, a lot of them were NDP background and they used it for political gain. They might, for example, be heavy smokers, sitting across the desk from you. You're gasping but they're talking about big industry."

Bill Yurko saw many environmental groups established during his tenure, as world conferences created an awareness of the environmental consequences of neglect.

"I actively encouraged public involvement in environmental management. I had the Environment Conservation Authority hold hearings across the province on most projects, I wanted cost/benefit analyses, I wanted the mass media actively involved in the every project.



"I wasn't afraid of those groups at all. I'd meet with them and put down the practical and theoretical case before them in no uncertain terms and I never had any difficulty with them at all.

"It is when you are unsure of yourself and what you want to do and accomplish that you have difficulty with the groups."

Yurko acknowledges "some of the guys had problems with them subsequently. The problem was the government became defensive and instead it should have been leading the way. Because pollution control at the source really doesn't cost much, it's when you've neglected it there, it becomes awesomely expensive and that's where the resistance comes."

Cookson found that taking a conciliatory approach to industry worked more effectively than confrontation tactics.

"By and large, industry did an excellent job once they knew the rules. Where we ran into trouble was when a breakdown did occur or a spill, we didn't walk right in and lock the gates. I think that used to upset a lot or our critics. But we tried to work with industry more.

"I think initially we were pretty soft, but towards the end of my time we got pretty tough. One time we laid charges against a janitor in a school somewhere in the south. He had used 2-4-D without proper handling and a lot of children were nauseated. So we laid it on that little fellow and there was a lot of coverage on it."

Russell found industry — despite some "stamping of feet and yelling" — was generally co-operative.

"I would explain, we're trying to clean up past messes and at the same time we're making sure no further mess is done. We want to leave Alberta just a little bit better than when we found it."

Bill Yurko created legislation that authorized the minister to shut down any plant that violated pollution regulations. Did he ever exercise that authority?

> *"It is when you are unsure of yourself and what you want to do and accomplish that you have difficulty with the groups."*

"I threatened one in Edmonton. I walked in and said 'If you don't stop and clean up your mess, I'll shut you down tomorrow.' And boy, they shut the plant down and pretty quickly they started to put in systems for recovering sulphur."

What has a term in this portfolio taught them?

For Dave Russell, the Red Deer River dam taught him "not to be diverted by temporary roadblocks.

"We really looked into that issue carefully and didn't take our decision lightly. I'm really glad now that we finished that project successfully and I think the people around it are too. But there were many times we were tempted to say, 'Oh, forget it'."

Cookson wishes he could have done more, particularly establishing a recycling program for used pesticide, herbicide and oil containers.

"I don't think the public realizes that what you'd like to do as a minister has to get past a caucus and into cabinet."

For Bill Yurko, the job brought home the "enormous responsibility that a minister takes over because everything involves the environment, whether it's transportation, industrial expansion, city growth, housing, sewage, recycling. It all involves quality of life and the environment."

And John Younie, in his first five months as environment critic: "Environmental atrocities have reached a critical threshold. The four or five decades since the 1940s have really taken their toll until we're almost at the point of no return."

Ken Kowalski sees his job from the opposite end of the spectrum.

"The government, people, municipalities, industry and interest groups are all committed to one objective: to make sure we have one of the safest, cleanest environments. And quite frankly, on a comparative basis to the other areas in Canada and indeed the United States I think we're a leader."

An interview with former Environment minister Fred Bradley could not be arranged in time for this article.

Helen Corbett is a freelance journalist and filmmaker living in Canmore.

If undelivered, return to:

Environment Views
Alberta Environment
9820 - 106 Street
Edmonton, Alberta T5K 2J6

ENVIRONMENT UPDATE

Alberta Environmental Awards

To honor individuals and groups with a concern for a commitment to the environment, Alberta Environment has created the Alberta Environmental Awards.

The awards will be presented for the first time during Environment Week '87 (May 31-June 6) and will be continued as an annual celebration.

One award will be given annually in each of three categories: individual citizen; industry, business or government agency; and educational institution or organization. Recipients will be presented with a plaque at a ceremony in Edmonton.

To be eligible, a group or individual should have demonstrated an extraordinary commitment to the environment and have been instrumental in:

- increasing public awareness and understanding of an environmental problem or situation;
- identifying, reducing, solving or avoiding an environmental problem; or
- improving an aspect of Alberta's environment.

Nominations must be submitted by December 31, 1986 to:
The Chairman
Alberta Environment Awards
Alberta Environment
14th Floor, 9820 - 106 St.
Edmonton T5K 2J6

For further information, contact Alberta Environment's communications branch, 427-6267.

ECA Goes On-Line

The Environment Council of Alberta, the province's "environmental watchdog," has set up an electronic bulletin board called ECA-ONLINE that extends the Council's operating hours to 24 hours a day, seven days a week.

The new system will be part of a rapidly growing network. All across the continent, thousands of people use their microcomputers and modems to read electronic bulletin boards. A modem, which is essentially a telephone for computers, lets your computer access information stored on another computer, if the computer has been set up to allow such communications. An electronic bulletin board is just such a setup.

ECA-ONLINE offers information on upcoming environmental events, a facility for leaving messages for the Council or the public at large, minutes and agendas for the Council's public advisory committee meetings, and a conference facility where opinions can be exchanged.

The bulletin board has been operating since October 3. In the first two weeks, 58 calls were made by 39 different people. Some callers left messages, and some "downloaded" information files (press releases, speeches, the ECA publication list, and computer programs) to their own computers.

The great advantage of electronic bulletin boards is the almost instantaneous, free (in the Edmonton telephone exchange area) distribution of your message and exchange of viewpoints with other interested people through the message and conference facilities. Callers not on the Edmonton exchange can access the board, but they must pay long-distance toll charges for the call.

The Council is fine-tuning the bulletin board to meet the needs of the users and would appreciate on-line input and contributions. Publication announcements, book/TV program reviews, and profiles of organizations and programs are under consideration as features of the board. If you would like to contribute an editorial or profile, or have a notice or announcement posted, please let the Council know.

To make use of ECA-ONLINE, here are the essential details: you need a computer, a modem, and a communications program. (ECA recommendations are available upon request.) Load your communications program and dial the ECA-ONLINE phone number, then use your program according to its instruction manual. The Council can provide an excellent communications program free of charge, through the principle known as "shareware," although a contribution to the program's designer is recommended if you like and use the program. If you are already familiar with computers and modems, the communications parameters are 300 or 1200 baud, parity = none, 8 data bits, 1 stop bit. The ECA-ONLINE phone number is 438-5793, and the operating hours are 5:00 p.m. to 8:00 a.m. on weekdays and 24 hours weekends and holidays.

For further information, contact the ECA at 5555 Calgary Trail, Edmonton T6H 5P9, 427-5792.

Tourism & the Environment — Conflict or Harmony?

Proceedings of the 1986 symposium on the above topic, sponsored by the Canadian Society of Environmental Biologists — Alberta Chapter, are now available. Included in the proceedings are 13 papers presented by representatives from the Alberta government, Parks Canada, the Tourism Industry Association of Alberta, a number of universities across Canada, and the media. Please send a cheque or money order for $12.00 to CSEB, Alberta Chapter, Box 12, Substation 11, Edmonton, Alberta. T6G 2E0.

If you have a short news item of province-wide interest you'd like to contribute to Environment Update, please send it to the editor at the address on the Contents page. The editor reserves the right to select and edit the items.